



IFA Conference 2017 Restraining Logs on Trucks – innovative compliance solutions

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Key Steps to Encourage Innovation

- **Clear Definition of the Problem**
- **Ownership of the Problem – forest owners and contractors**
- **Supported Testing**
- **Understanding the First Principles**
- **Clear Communication to all Stakeholders**
- **Alternate solutions**
- **Perfection vs Best Feasible**
- **Blockers**
- **Key Learnings**
- **Next Steps**



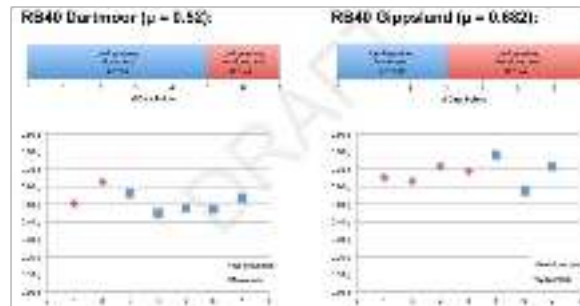
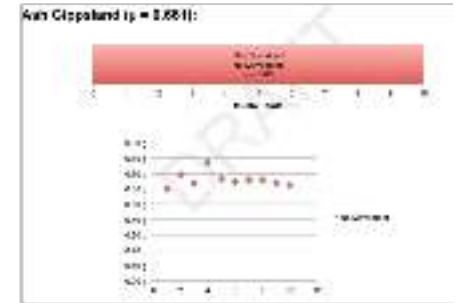
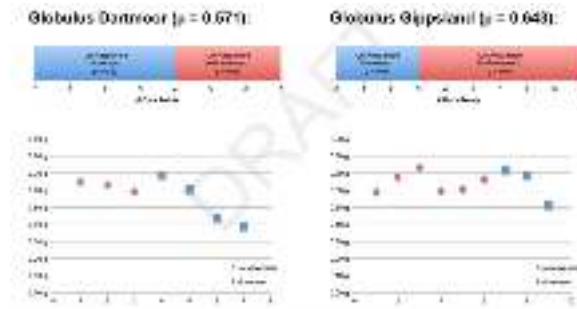
Clear Definition of the Problem

- **Logs are falling from trucks** – forwards and backwards
- **Performance Standard is outside normal experience** – 0.8g forward restraint requirement reflects a heavy vehicle at maximum braking colliding with a light vehicle



Clear Definition of the Problem

- Logs are a natural product and variable
 - Friction
 - Density
 - Length
 - Diameter



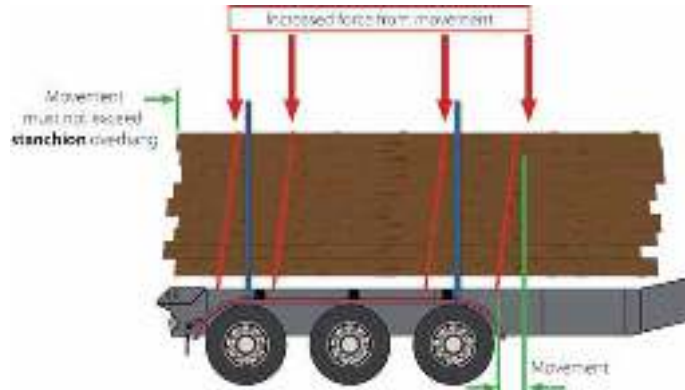
Ownership of the Problem

- **Understanding the penalties** – e.g. fuel tanker controversy
- **Contractor in-house testing**
- **Incorrect use of winches**
- **Low clamping force provided by webbing**



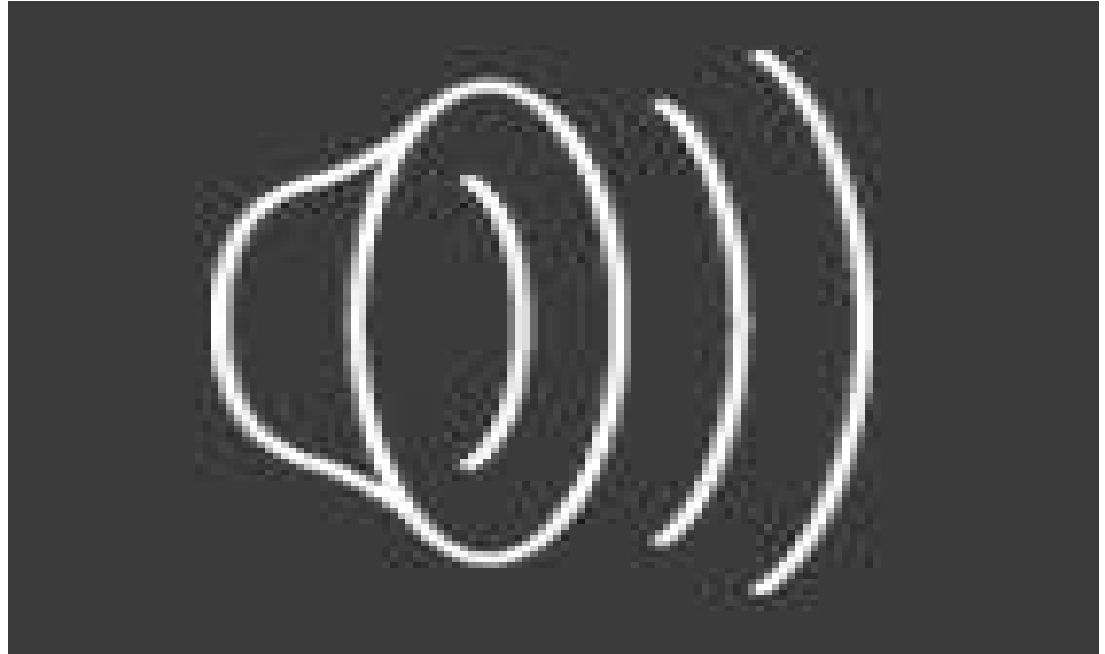
Supported Testing

- **Specialists in the field of load restraint** – better understanding of the issues and challenged existing models
- **Restraint by load shift discredited**



Understanding the First Principles

- **Forces** (actual and performance standard)
- **Log characteristics** – friction, length, diameter, moisture
- **Load characteristics** – mass, crowning, construction
- **Blocking** - Bolsters, Stanchions, Tailboards, Headboards
- **Lashing types** – webbing, chain, dyneema
- **Tensioning devices** – Winches, Binders



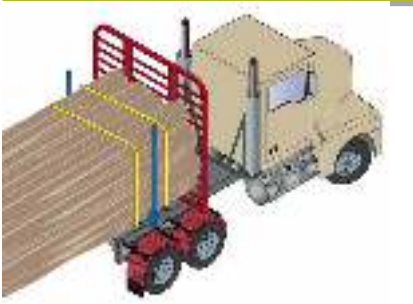
Communication to all Stakeholders

- **Forest managers** – individually and via industry organisations
- **Contractors** – individually, via committees and contractors associations
- **Suppliers**
- **Engineers**
- **Regulators**



Alternate Solutions

Headboards on Trailers



Higher capacity winches



Double Purchase - webbing



Double Purchase - ice chain



Chains - low stretch



Dyneema rope - low stretch, strong, light



Nett result = higher clamping



Move to Best Feasible Solution even if not perfect

- Consistent and clear messaging about need to change
- New suppliers and materials
- Continuous communications with regulator
- Open minded and industry focused regulator



Blockers

- **Variable test results** – logs are natural and variable
- **Variable log types, length, moisture content, species, processing**
- **Industry safety bodies are not well established**
- **New people who have not been involved throughout**
- **Contractors regionally based**
- **Different regulators**



Key Learnings

- **Load shape is critical** – any solution will require constant attention to loading standards
- **Training of loader operators**
- **Load consignors must understand implications of log specifications**
- **Mixed load are difficult to specify and restrain safely**
- **Failure can be catastrophic**



Sample assessment of softwood saw log load for mass distribution



Sample assessment of Globulus log load for mass distribution



Next Steps

- **National Training Workshops** – NHVR funded
- **Development of a Log Haulage Code of Practice** – AFCA and AFPA sponsored

